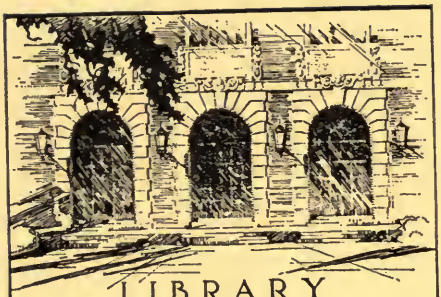

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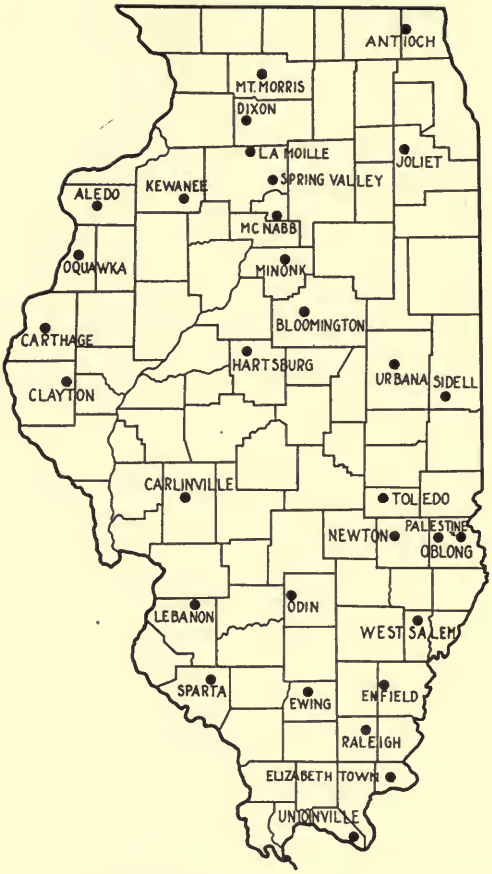
BULLETIN No. 305

CROP YIELDS FROM ILLINOIS SOIL EXPERIMENT FIELDS IN 1927

By F. C. Bauer

URBANA, ILLINOIS, APRIL, 1928



Location of the Thirty-One Experiment Fields From Which Data Are Presented in This Bulletin

CROP YIELDS FROM ILLINOIS SOIL EXPERIMENT FIELDS IN 1927

By F. C. Bauer, Chief, Soil Experiment Fields

The farm lands of Illinois are made up of many soil types which vary widely in productiveness and in response to systems of soil treatment. Frequently marked variations in these respects are found in the same community between neighboring farms and even on the same farm. These facts are well known to all farmers. The systems of soil treatment that may be employed to maintain or increase the productiveness of different soils and thereby enable the farmer to produce his crops at less cost and increase his net profits, are not, however, so well understood. This is a matter for careful investigation under field conditions.

In order to furnish the farmers of the state with information that would be helpful to them in planning systems of soil treatment for their own farms, the Illinois Agricultural Experiment Station for a number of years has conducted field investigations in all sections of the state on extensive soil types, varying widely in productiveness, to test the effectiveness of different systems of soil treatment on the yield of farm crops. Altho some investigations along this line had been going on at Urbana since 1876, the first of the outlying soil experiment fields was established in 1901. Some of the original fields are still in operation. In all, more than fifty soil experiment fields have been established in Illinois. Some of these have been abandoned at one time or another for various reasons. During the crop season of 1927, thirty-one of these fields were in operation. The location of these may be ascertained by referring to the accompanying map.

The complete results from all the Illinois soil experiment fields up to and including 1924 were reported in Bulletin 273. Subsequent results have been reported in Bulletins 280 and 296. The present bulletin is a continuation of this series of publications, being a record of the yields for the year 1927.

In these publications the figures are presented as a matter of record, without comment or discussion. In a broad way, of course, the results speak for themselves and carry certain definite lessons to those who have been following the investigations of the Station. Discussions of these investigations have appeared from time to time in former station publications, and further discussions of an interpretative nature will appear in future publications.

Explanation of Tables and Symbols

The results reported on the pages following are for the individual fields arranged alphabetically rather than by location or by soil type. All yields except those in parentheses indicate acre yields in bushels. Yields in parentheses indicate acre yields in tons.

The following symbols have been used in this bulletin to denote the soil treatments applied:

0 = No treatment	rP = Rock phosphate
M = Manure	sP = Superphosphate (acid phosphate)
R = Crop residues[1]	bP = Bone phosphate (bone meal)
Le = Legume catch crop[2]	S = Flowers of sulfur
L = Limestone	KCl = Muriate of potash
K = Potash	( ) = Tons of hay

[1]The crop residues are chiefly cornstalks and sweet clover plowed down as a green manure. In some cases the second crop of clover and other legume residues have also been plowed down.

[2]Legumes seeded in small grain to be plowed down the following year for succeeding crops.

TABLE 1.—ALEDO FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Corn	Series 300 Wheat	Series 300 Stubble clover	Series 400 Oats
	WEST HALF					
1	0	49.2	36.2	29.2	....	53.1
2	M	58.2	53.6	37.0	....	67.5
3	ML	67.8	68.2	39.2	....	68.1
4	MLrP	69.6	65.8	38.3	....	67.2
5	0	41.0	39.2	30.3	....	59.7
6	R	45.0	42.4	30.5	....	53.4
7	RL	60.2	77.0	35.7	(1.20)	60.9
8	RlrP	64.0	79.0	35.0	(1.25)	59.1
9	RLrPK	65.4	74.8	38.3	(1.57)	62.2
10	0	35.6	31.8	30.8	....	56.6
	EAST HALF					
1	RL	44.4	39.8	30.0	(.75)	50.6
2	MrP	65.2	55.6	40.5	....	68.4
3	MLbP	68.0	66.8	41.3	....	68.8
4	MLrP	70.4	65.8	40.3	....	69.4
5	RsP	41.2	43.0	33.3	....	56.9
6	RrP	46.0	46.8	36.2	....	57.8
7	RLsP	63.6	69.8	38.3	(1.12)	59.4
8	RLrP	65.8	78.6	38.3	(1.20)	58.4
9	RLrPK	69.8	75.6	39.2	(1.92)	60.9
10	RLrP	47.0	51.8	32.7	(1.20)	56.9

Note.—In 1924 the plots on these series were divided into east and west halves in order to provide for additional phosphorus studies. The plots on the west halves of all series continue under the original soil treatment but the plots on the east halves receive the treatment designated above. No more rock phosphate will be applied to the phosphate plots on the west halves for an indefinite period, these plots having received a total of 8,000 pounds an acre.

On the east halves all phosphorus fertilizers will be applied twice in the rotation, ahead of the wheat crop and the first corn crop, at the following annual acre rates: rock phosphate 500 pounds, superphosphate 200 pounds, bone meal 200 pounds. The minimum amount of limestone necessary for the successful growth of the clover green-manure crop will be applied to Plots 1-E and 10-E, 4,000 pounds an acre having been applied in 1924.

TABLE 2.—ALEDO FIELD: MINOR SERIES

Serial plot No.	Series 500 Soil treatment	Series 500 Corn	Series 600 Soil treatment	Series 600 Corn
1	R	33.9	R	37.2
2	RbP	63.2	RsP	54.8
3	RLbP	71.3	RLsp	67.0
4	RL	58.5	RL	60.8

TABLE 2.—*Continued*

Serial plot No.	Series 700		Series 800	
	Soil treatment	Corn	Soil treatment	Corn
1	R	39.9	R	42.2
2	RrP	61.8	R, slag P	60.7
3	RLrP	67.8	RL, slag P	73.1
4	RL	63.0	RL	60.4

TABLE 3.—ANTIOCH FIELD: SERIES 100

Plot No.	Soil treatment	Corn	Plot No.	Soil treatment	Corn
1	0	9.4	6	LRbP	17.2
2	LrP	16.2	7	LRK	16.0
3	LRrP	19.4	8	LKbP	15.6
4	LbP	17.4	9	LRKbP	24.0
5	LKrP	14.4	10	RKbP	26.6

Note.—At Antioch, beginning with 1924, rock phosphate has been applied to Plots 2, 3 and 5 at the annual acre rate of 500 pounds; one-half of the rotation application is made ahead of the oats crop and one-half ahead of the wheat crop. The soil treatment remains unchanged on the other plots.

TABLE 4.—BLOOMINGTON FIELD: SERIES 100

Plot No.	North Half		South Half	
	Soil treatment	Corn	Soil treatment	Corn
1	R	49.8	0	41.0
2	RLbP	58.6	RL	46.0
3	RLrP	63.6	RLsP	67.6
4	RLbP	60.0	RLbP	63.6
5	RLKrP	61.4	RLKsP	69.4
6	RLbP	60.8	RLbP	64.2
7	RLKrP	66.4	RLKsP	74.8
8	RLKbP	67.4	RLKbP	69.4
9	RLKbP	75.8	RLKbP	77.8
10	RKbP	56.6	RKbP	60.6
11	RrP	61.8	RsP	63.0

Note.—At Bloomington in 1924 an additional plot was laid out at the east end of the series. All plots were divided into north and south halves and the soil treatment planned as follows: Residues (cornstalks, the second crop of red clover, legume green-manure crops) to be turned under on all plots except Plot 1-S. Different phosphorus carriers to be applied at the following acre rates per rotation: bone meal, 1,000 pounds, to Plots 2-N, 4-N, 6-N, 8-N, 9-N and 10-N; rock phosphate, 2,500 pounds, to Plots 3-N, 5-N, 7-N, and 11-N; superphosphate, 1,000 pounds, to Plots 3-S, 5-S, 7-S, and 11-S. Two-fifths of the rotation application of these phosphates is to be made ahead of the oats crop, two-fifths ahead of the wheat crop, and one-fifth ahead of the first corn crop.

TABLE 5.—CARLINVILLE FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Clover-alfalfa	Series 200 Corn	Series 300 Oats	Series 400 Wheat
1	0	(2.00)	34.8	11.7	20.4
2	M	(1.99)	52.9	14.7	25.8
3	ML	(4.21)	56.7	21.6	27.4
4	MLrP	(4.58)	56.5	21.1	27.8
5	0	(1.79)	30.8	17.3	19.0
6	R	(.92)	29.7	13.8	21.8
7	RL	(3.23)	32.5	16.7	25.1
8	RLrP	(3.20)	38.9	17.0	25.1
9	RLrPK	(3.50)	62.2	17.0	28.4
10	0	(1.85)	39.9	16.7	19.9

TABLE 6.—CARLINVILLE FIELD: MINOR SERIES

Serial plot No.	Soil treatment[1]	Series 700 Corn	Series 800 Corn
1	LeL (250)	36.8	33.2
2	LeL (1000)	39.0	32.2
3	LeL (500)	40.2	51.4
4	LeL (500), treble superphosphate	40.0	50.8
5	LeL (500), superphosphate	45.0	48.4
6	LeL (500), rock phosphate	40.2	47.2
7	L (500)	30.6	26.8

[1]The figures in parentheses refer to the annual pound rate per acre at which limestone is applied. Series 700 has now received two applications of limestone, each of which was four times the annual rate; and Series 800 has received one application, which was twenty times the figure indicated as the annual rate.

TABLE 7.—CARTHAGE FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn[1]	Series 200		Series 300	Series 400
			Wheat	Stubble-clover	Clover	Oats
1	0	31.9	19.6	....	(2.21)	25.8
2	M	45.9	24.7	....	(2.98)	31.3
3	ML	46.9	27.5	....	(3.34)	37.3
4	MLrP	59.7	30.6	....	(3.41)	47.7
5	0	34.5	20.2	....	(2.31)	28.9
6	R	39.8	24.6	(.36)	(1.88)	24.8
7	RL	49.0	29.6	(1.21)	(2.09)	30.8
8	RLrP	58.6	31.7	(1.59)	(2.37)	31.9
9	RLrPK	67.7	36.4	(1.93)	(2.46)	35.3
10	0	44.3	19.5	....	(2.08)	29.4

[1]Corn was a thin stand on Plots 3, 5, and 6 as a result of water-logged soil in the spring.

TABLE 8.—CARTHAGE FIELD: MINOR SERIES

Serial plot No.	Soil treatment[1]	Series 500 Oats	Series 500 Stubble clover West[2]	Series 600 Corn West[2]	Series 600 Corn East[2]	Series 700 Corn West[2]	Series 700 Corn East[2]
1	RL	25.0	(.92)	32.0	36.9	37.1	37.1
2	RLrP (100)	31.3	(.91)	38.2	40.8	28.0	32.5
3	RLrP (100), gypsum (100)	32.8	(.86)	35.7	40.8	43.8	35.7
4	RLrP (200)	31.9	(.86)	38.7	41.2	31.9	27.3
5	RLrP (200), gypsum (200)	33.1	(.81)	32.4	38.2	28.0	24.0
6	RLrP (400)	35.9	(.86)	25.0	34.5	41.7	41.7
7	RLrP (400), gypsum (400)	32.8	(.81)	32.3	33.5	32.1	36.9
8	RL	31.3	(.83)	33.7	38.5	41.2	38.8

[1]The figures in parentheses indicate the annual acre rates (pounds) at which rock phosphate and gypsum are applied.

[2]The fall growth of sweet clover is regularly removed from the west halves of the series and the corn following is harvested by half plots.

TABLE 9.—CLAYTON FIELD

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 200 Stubble clover	Series 300 Clover	Series 400 Oats
1	0	39.8	13.0	....	(1.54)	20.2
2	M	48.6	19.0	....	(2.70)	27.8
3	ML	51.6	23.3	....	(2.57)	32.3
4	MLrP	47.4	25.2	....	(2.92)	31.3
5	0	31.4	15.2	....	(1.71)	22.8
6	R	44.6	15.4	(.29)	(1.48)	23.1
7	RL	56.4	20.4	(1.18)	(1.70)	29.7
8	RLrP	58.8	22.9	(1.40)	(1.77)	32.0
9	RLrPK	63.0	26.7	(1.50)	(2.20)	33.6
10	0	44.4	14.6	....	(1.69)	25.0

(See opposite page for Table 10.)

TABLE 11.—DIXON FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Oat hay[1]	Series 600 Corn	Series 700 Oats	Series 800 Corn[2]
1-N	K	(1.10)	21.4	44.4	35.2
1-S	0	(1.09)	16.6	42.8	40.8
2-N	MK	(1.00)	32.0	53.1	47.4
2-S	M	(1.06)	38.0	54.7	45.8
3-N	MLK	(1.59)	45.0	60.6	49.2
3-S	ML	(1.59)	49.0	65.6	34.0
4-N	MLrPK	(1.57)	40.8	59.7	54.0
4-S	MLrP	(1.66)	48.2	65.6	37.6

[1]Nurse crop for alfalfa. [2]Heavy rains late in May weakened the stand on 803-S and 804-S.

TABLE 10.—DIXON FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Clover	Series 400 Oats
	SOUTH HALF				
1	0	35.4	21.2	(1.59)	38.4
2	M	51.6	23.3	(2.46)	58.8
3	ML	60.6	22.2	(2.71)	55.6
4	MLrP	61.4	25.5	(2.88)	55.9
5	0	32.2	17.3	(1.92)	40.3
6	R	38.8	17.8	(1.28)	41.6
7	RL	54.6	20.7	(1.97)	45.0
8	RLrP	55.2	22.3	(2.04)	49.4
9	RLrPK	61.6	24.3	(2.48)	50.0
10	0	28.8	16.5	(1.10)	34.4
	NORTH HALF				
1	RL	28.2	16.8	(.78)	38.8
2	MrP	56.8	26.2	(2.72)	57.2
3	MLbP	63.2	26.7	(2.80)	55.9
4	MLrP	56.8	26.0	(2.88)	54.7
5	RsP	36.0	23.7	(1.91)	44.1
6	RrP	41.6	22.8	(1.96)	42.8
7	RLsP	53.8	24.8	(2.41)	48.1
8	RLrP	53.6	23.8	(2.07)	45.9
9	RLrPK, gypsum	60.8	26.8	(2.61)	50.0
10	RLrP	34.2	18.2	(1.57)	40.0

Note.—In 1924 the plots on these series were divided into north and south halves, and some additional investigations were begun. The plots on the south halves of all series continue under the original soil treatment, but the plots on the north halves receive the treatment designated above. No more rock phosphate will be applied to the phosphate plots on the south halves for an indefinite period, these having received a total of 8,000 pounds an acre. The same holds true for the north half of Plot 9 of all series.

On the north halves the phosphatic fertilizers and gypsum are applied twice in the rotation, one-half of the rotation quota ahead of wheat, and one-half ahead of corn, at the following annual acre rates: rock phosphate 500 pounds, superphosphate 200 pounds, bone meal 200 pounds, gypsum 200 pounds.

The minimum amount of limestone necessary for the successful growth of clovers will be applied to Plots 1-N and 10-N on all series, 4,000 pounds an acre having been applied in 1924.

TABLE 12.—ELIZABETHTOWN: MAIN SERIES

Serial[1] plot No.	Soil treatment	Series 100 Wheat	Series 200 Timothy-sw. clover	Series 300 Wheat	Series 400 Corn	Series 500 Wheat
1	0	2.3	(0.00)	2.5	29.8	1.7
2	M	2.6	(0.00)	1.9	37.2	2.0
3	ML	6.2	(1.45)	9.2	46.2	5.3
4	MLrP	8.2	(2.18)	9.4	43.7	4.5
5	0	2.2	(0.00)	.4	24.7	1.5
6	R	1.0	(0.00)	.7	28.3	1.3
7	RL	3.8	(1.21)	5.2	40.9	4.2
8	RLrP	6.6	(2.18)	5.1	49.1	5.0
9	RLrPK	6.2	(3.15)	6.7	49.3	5.8
10	0	3.3	(0.00)	1.2	14.8	1.2

[1]Plot 1 on Series 100, 300, and 400 and Plot 10 on Series 100 and 200 lie on lower ground and are naturally more productive.

TABLE 13.—ELIZABETHTOWN: MINOR SERIES

Soil treatment	Plot A Wheat	Plot B Corn	Plot C Soybeans
RLsP	11.7	53.6	(2.00)
RLrP	6.2	52.6	(1.92)

TABLE 14.—ENFIELD FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200		Series 300	Series 400
			Wheat	Stubble clover	Sw. clover-alfalfa	Soybeans[1]
1	0	6.9	3.2	....	(0.00)	3.5
2	M	20.2	7.5	....	(0.00)	6.5
3	ML	36.3	17.8	....	(2.38)	19.6
4	MLrP	32.4	25.5	....	(2.62)	18.2
5	0	4.3	4.8	....	(0.00)	4.8
6	R	6.4	5.2	(0.00)	(0.00)	4.7
7	RL	15.2	12.9	(0.00)	(.81)	14.6
8	RLrP	13.4	20.2	(0.00)	(.78)	14.7
9	RLrPK	26.0	23.5	(1.39)	(1.34)	19.8
10	0	4.5	5.8	....	(0.00)	6.5

[1]Substitute for oats.

TABLE 15.—ENFIELD FIELD: MINOR SERIES

Serial plot No.	Soil treatment[1]	Series 700 Corn	Series 800 Wheat
1-W	L	11.4	.7
1-E	L	11.0	2.0
2-W	LrP (2000) sP(100), sweet clover	17.6	1.3
2-E	LrP (2000) sP (100), red clover	9.5	4.7
3-W	LrP (2000), sweet clover	16.0	2.3
3-E	LrP (2000), red clover	11.0	5.7
4-W	LrP (1000) sP (200), sweet clover	18.2	2.7
4-E	LrP (1000) sP(200), red clover	14.4	6.7
5-W	LrP (1000), sweet clover	13.6	4.0
5-E	LrP (1000), red clover	12.4	7.0
6-W	L, sweet clover	7.2	3.0
6-E	L, red clover	8.5	4.0

[1]The figures in parentheses indicate the total applications of phosphate per acre excepting that Plots 804 and 805 received an additional application of 1,000 pounds of rock phosphate per acre for the 1927 wheat crop.

TABLE 16.—EWING FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Soybeans	Series 400 Soybeans[1]
1	0	5.8	1.8	(.41)	.7
2	M	24.6	4.5	(.63)	2.0
3	ML	63.0	18.2	(1.65)	11.3
4	MLrP	58.6	23.6	(1.60)	12.7
5	0	2.4	3.0	(.49)	2.7
6	R	1.1	2.8	(.48)	2.0
7	RL	5.4	17.2	(1.01)	10.7
8	RLrP	5.0	20.7	(1.22)	12.7
9	RLrPK	52.3	27.7	(1.48)	14.7
10	0	6.2	4.1	(.60)	1.4

[1]Soybeans grown as a substitute for oats.

TABLE 17.—EWING FIELD: MINOR SERIES[1]

Serial plot No.	Soil treatment	Series 500N Soybeans[2]	Series 500S Corn	Series 600 Wheat
1	MLrPK, no clover	(.36)	4.3	10.4
2	MLrPK, white biennial sweet clover	(.32)	4.9	19.0
3	MLrPK, red clover	(.32)	3.7	21.9
4	MLrPK, hubam clover	(.29)	2.3	22.4
5	MLrPK, alsike clover	(.29)	5.6	23.0
6	MLrPK, yellow biennial sweet clover	(.29)	3.9	23.0

[1]These series were replotted from what were formerly Plots A and B. Prior to 1917 fertilizers had been applied as follows: manure 8 tons, limestone 8 tons, rock phosphate 6,000 pounds, and kainit 2,400 pounds per acre. With the exception of limestone used when necessary to grow the clovers, no more fertilizing materials will be added. A study will be made of relative value of different clovers as the source of organic manure in a rotation of corn, oats, and wheat (clover catch crop).

[2]Soybeans grown as a substitute for oats.

TABLE 18.—EWING FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 700 Soybeans[1]	Series 800 Wheat	Series 900 Corn
1	Le	(.44)	3.3	3.6
2	LeL	(.47)	4.7	9.0
3	LeLsP (100)	(.58)	15.0	12.5
4	LeLrP (200)	(.61)	10.7	12.0
5	LeL	(.56)	5.7	5.1
6	LeLsP (200)	(.70)	12.7	10.3
7	LeLrP (400)	(.72)	10.0	15.5

[1]Soybeans grown as a substitute for oats.

TABLE 19.—HARTSBURG FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Corn	Series 300 Wheat	Series 300 Stubble clover	Series 400
			WEST HALF			
1	0	60.8	48.0	16.7	....	37.5
2	M	65.6	59.0	21.7	....	38.4
3	ML	67.0	71.2	22.3	....	48.4
4	MLrP	72.8	72.2	23.5	....	46.9
5	0	60.0	60.0	20.0	....	37.5
6	R	60.2	71.8	20.8	(.85)	44.4
7	RL	65.2	69.6	19.3	(.75)	42.2
8	RLrP	69.6	77.2	22.7	(.90)	37.5
9	RLrPK	65.2	71.2	20.0	(1.00)	41.3
10	0	56.6	55.8	23.0	....	41.9
			EAST HALF			
1	RL	58.8	73.4	15.5	(.95)	32.5
2	MrP	64.8	61.6	23.8	....	45.3
3	MLbP	69.0	71.0	23.8	....	46.9
4	MLrP	72.4	69.2	25.0	....	48.8
5	RsP	59.8	79.6	18.7	(1.00)	37.2
6	RrP	63.2	78.8	23.3	(1.00)	47.8
7	RLsP	69.4	81.0	22.5	(.55)	43.1
8	RLrP	68.4	78.8	21.7	(.90)	41.9
9	RLrPK, gypsum	67.8	73.4	22.3	(.95)	41.3
10	RLrP	63.6	70.4	17.8	(.85)	40.3

Note.—In 1924 the plots on these series were divided into west and east halves and additional investigations were begun. The plots on the west halves of all series continue under the original soil treatment but the plots on the east halves receive the treatment designated above. No more rock phosphate will be applied to the phosphate plots on the west halves for an indefinite period, these plots having received a total of 8,000 pounds an acre. The same holds true for the east half of Plot 9 on all series.

On the east halves the phosphatic fertilizers and gypsum are applied twice in the rotation, one-half ahead of the wheat crop and one-half ahead of the first corn crop, at the following annual acre rates: rock phosphate 500 pounds, superphosphate 200 pounds, bone meal 200 pounds, gypsum 200 pounds.

The minimum amount of limestone necessary to secure successful growth of the legume catch crop will be applied to Plots 1-E and 10-E on all series, 4,000 pounds an acre having been applied in 1924.

TABLE 20.—HARTSBURG FIELD: SERIES 500

Plots 501 to 505			Plots 506 to 510			Plots 511 to 515		
Plot No.	Soil treatment	Corn	Plot No.	Soil treatment	Corn	Plot No.	Soil treatment	Corn
1	0	71.8	6	R	77.3	11	LeM	62.5
2	M	67.7	7	RL	73.8	12	LeML	67.1
3	ML	78.2	8	RLrP	80.3	13	LeMLrP	67.1
4	MLrP	76.3	9	RLrPK	78.5	14	LeMrP	65.2
5	0	71.1	10	0	66.5	15	0	56.2

TABLE 21.—JOLIET FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Alfalfa[1]	Series 300 Corn	Series 400 Wheat	Series 500 Clover-alfalfa	Series 600
1	0	33.0	(.53)	20.4	29.1	(1.00)	63.0
2	M	47.2	(.69)	41.5	33.2	(1.13)	69.1
3	ML	54.4	(.96)	55.0	33.8	(1.40)	72.7
4	MLrP	51.4	(2.01)	53.5	38.1	(2.36)	70.8
5	0	32.4	(.70)	18.9	29.2	(1.15)	62.3
6	R	30.4	(.74)	20.2	33.0	(.92)	62.3
7	RL	32.2	(.99)	34.7	32.6	(.78)	68.4
8	RLrP	37.8	(1.98)	46.6	40.5	(1.82)	81.1
9	RLrPK	47.4	(2.19)	50.2	42.8	(2.00)	84.5
10	0	34.8	(.50)	13.8	30.2	(.83)	59.2

[1]Leaf hopper injured the alfalfa; only one crop was harvested.

TABLE 22.—JOLIET FIELD: MINOR SERIES

Serial[1] plot No.	Soil treatment	Series 700 Barley	Series 800 Corn[2]	Series 900 Legume hay	Series 1000 Wheat
1	L, clover	39.0	14.3	(.99)	22.5
2	LrP, clover	40.0	18.6	(1.46)	31.5
3	LrP, gypsum, clover	45.8	20.1	(1.60)	32.2
4	L, clover	41.0	16.9	(1.38)	28.3
5	L, alfalfa	37.9	21.3	(0.00)	27.5
6	LrP, alfalfa	42.3	21.0	(0.00)	32.0
7	LrPL (8000), alfalfa	42.7	21.0	(0.00)	30.5
8	LrP, KCl, alfalfa	45.2	27.4	(0.00)	29.7
9	L, KCl, alfalfa	33.5	26.2	(0.00)	24.5
10	L, alfalfa	34.4	27.1	(0.00)	26.0
11	L, clover	28.3	....	(1.59)	....
12	LsP, clover	36.9	....	(1.68)	....
13	LrP, clover	41.5	....	(1.86)	....

Note.—In 1924 the rotation on the minor series at Joliet was changed to corn, barley, wheat, and biennial legumes (red clover on Plots 1 to 4 on all series and on Plots 11, 12, and 13 on Series 700 and 900, alfalfa on Plots 5 to 10). All plots had received limestone at the rate of 5,000 pounds an acre prior to 1924. At that time Plot 7 on all series received 8,000 pounds of limestone an acre. Fertilizers as designated in Table 22 are applied at the following annual acre rates: rock phosphate 400 pounds, potassium chloride 100 pounds, gypsum 100 pounds. These fertilizers are applied twice in the rotation, ahead of the wheat and corn crops. Superphosphate is applied for the wheat crop at the rate of 250 pounds an acre.

[1]Plots 11, 12, and 13 appear only on Series 700 and 900.

[2]Owing to corn-borer investigations, the corn was not planted until June 10.

TABLE 23.—KEWANEE FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Clover	Series 400 Oats
1	0	39.0	28.2	(1.61)	65.8
2	M	66.6	38.3	(2.33)	78.8
3	ML	67.4	35.5	(2.64)	81.7
4	MLrP	73.4	41.2	(3.56)	81.7
5	0	41.2	34.8	(2.11)	70.9
6	R	44.8	34.9	(1.17)	70.5
7	RL	53.4	37.1	(1.29)	70.8
8	RLrP	63.6	43.9	(1.79)	74.8
9	RLrPK	68.8	46.2	(1.66)	78.3
10	0	37.2	27.0	(0.00)	57.8

TABLE 24.—KEWANEE FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Corn	Series 600 Wheat	Series 700 Clover	Series 800 Oats
1	RrP	58.3	45.6	(3.71)	80.6
2	RsP	59.1	46.4	(3.69)	82.2
3	RLrP	56.0	41.7	(3.51)	81.1
4	RLsP	56.5	46.2	(3.47)	84.7

TABLE 25.—LaMOILLE FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Corn	Series 300 Wheat	Series 400 Oats
1	0	44.6	51.8	21.0	60.0
2	M	50.0	56.4	27.8	75.3
3	ML	59.4	56.6	31.6	76.9
4	MLrP	56.4	50.2	31.6	72.3
5	0	31.0	35.6	17.9	60.6
6	R	41.2	40.2	23.0	66.9
7	RL	44.8	47.4	32.6	74.5
8	RLrP	49.8	51.8	31.0	73.9
9	RLrPK	51.0	49.2	28.4	67.5
10	0	34.0	31.0	21.0	60.8

TABLE 26.—LaMOILLE FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Corn	Series 600 Corn	Series 700 Alsike clover	Series 800 Wheat
1	0	33.2	38.4	(3.32)	21.5
2	M	35.2	37.9	(3.49)	28.7
3	ML	33.8	32.0	(3.05)	31.2
4	MLrP	35.4	27.2	(2.95)	29.7

TABLE 27.—LEBANON FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 200 Stubble clover	Series 300 Wheat	Series 400 Soybeans
1	0	26.8	17.8	....	19.2	(1.52)
2	M	26.6	22.9	....	26.7	(1.66)
3	ML	34.9	25.8	....	28.4	(1.61)
4	MLrP	35.0	24.2	....	29.2	(1.80)
5	0	17.3	20.2	....	20.2	(1.40)
6	R	22.9	18.2	(0.00)	24.3	(1.44)
7	RL	37.2	22.4	(1.44)	31.7	(1.56)
8	RLrP	43.0	22.4	(1.56)	32.4	(1.49)
9	RLrPK	49.4	25.1	(1.48)	32.8	(1.29)
10	0	32.7	18.7	....	25.8	(.95)

TABLE 28.—LEBANON FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Wheat	Series 500 Stubble clover	Series 600 Corn	Series 700 Oats
1-W	Le	24.5	(.91)	38.4	45.9
1-E	LesP	30.2	(1.02)	27.6	51.6
2-W	LeM	26.0	(1.68)	50.6	44.4
2-E	LeMsP	34.5	(1.47)	39.8	62.2
3-W	LeML	29.5	(1.67)	58.8	47.8
3-E	LeMsP	36.3	(1.97)	58.4	66.3
4-W	LeMLrP	26.5	(1.68)	60.6	54.7
4-E	LeMLrP	30.8	(1.72)	47.6	66.3

(See opposite page for Tables 29 and 30.)

TABLE 31.—MINONK FIELD

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Corn	Series 300 Wheat	Series 300 Stubble clover	Series 400 Corn
1	0	50.0	51.2	23.0	....	57.2
2	M	51.2	55.2	24.6	....	67.7
3	ML	53.0	57.4	22.7	....	62.8
4	MLrP	45.2	55.6	23.4	....	60.0
5	0	39.4	48.0	20.2	....	55.8
6	R	64.0	53.4	22.1	(1.15)	59.1
7	RL	64.4	51.2	20.0	(1.12)	54.7
8	RLrP	60.6	59.6	20.8	(1.30)	50.8
9	RLrPK	57.8	59.8	22.5	(1.40)	49.4
10	0	36.2	40.8	20.9	....	48.1

TABLE 29.—LEBANON FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 800 Potatoes	Series 900 Wheat
1	LeM	9.3	35.7
2	LesP (200)	23.0	34.3
3	LerP (400)	22.3	36.7
4	LesP (200), kainit (200)	24.0	38.0
5	LerP (400), kainit (200)	16.0	36.0
6	Le, straw	53.3	34.3
7	Le, straw, sP (200)	100.0	37.3
8	Le, straw, rP (400)	87.0	37.0
9	Le, treble superphosphate (100)	29.0	34.3
10	Le, potassium phosphate (200)	26.3	29.7

Note.—In 1925 Series 800 and 900 were laid out on land which had received 8,000 pounds of limestone, 2,000 pounds of rock phosphate, and 15 tons of manure an acre in 1911. The land grew alfalfa almost continuously from 1911 to 1925. A rotation of wheat (sweet-clover catch crop) and potatoes is planned. Fertilizers are applied as indicated in Table 29. The phosphates are supplied annually, rock phosphate 400 pounds, superphosphate 200 pounds, treble superphosphate 100 pounds and potassium phosphate 200 pounds an acre. Kainit 200 pounds an acre is applied for each potato crop. Two tons of manure an acre is applied for potatoes. Straw is applied as a mulch when the potatoes are coming thru the ground.

TABLE 30.—McNABB FIELD

Serial plot No.	Soil treatment	Series 100 Clover	Series 200 Wheat	Series 300 Oats	Series 400 Corn
1	R	(2.20)	32.2	54.4	63.8
2	RrP	(2.49)	31.0	61.3	74.2
3	0	(3.17)	25.8	62.8	66.2
4	MrP	(2.95)	30.8	66.3	75.6
5	M	(3.09)	28.8	68.1	78.2

TABLE 32.—MT. MORRIS FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Clover	Series 400 Oats
1	0	32.0	16.9	(1.77)	49.7
2	M	51.6	19.3	(2.63)	62.7
3	ML	60.5	24.2	(2.76)	70.9
4	MLrP	56.0	25.1	(2.62)	71.9
5	0	33.6	16.7	(2.01)	44.5
6	R	44.0	21.3	(.96)	46.3
7	RL	63.0	24.0	(1.69)	59.5
8	RLrP	64.1	23.0	(1.97)	64.2
9	RLrPK	62.1	23.8	(2.21)	66.7
10	0	33.2	16.2	(1.60)	43.6

TABLE 33.—MT. MORRIS FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Oat hay[1]	Series 600 Corn	Series 700 Mixed hay	Series 800 Barley
1	0	(1.45)	44.6	(2.63)	50.2
2	M	(1.46)	52.4	(3.05)	57.9
3	ML	(2.00)	68.8	(3.04)	66.9
4	MLrP	(3.00)	72.0	(2.96)	71.7

[1]Nurse crop for alfalfa.

TABLE 34.—NEWTON FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Mixed hay	Series 200 Wheat	Series 200 Stubble hay	Series 300 Oats	Series 400 Corn
1	0	(1.47)	.8	(0.00)	3.1	4.7
2	M	(1.70)	1.5	(0.00)	4.1	18.4
3	ML	(1.87)	23.8	(.30)	3.1	42.5
4	MLrP	(1.95)	25.2	(.85)	3.8	37.2
5	0	(1.30)	1.8	(0.00)	1.9	7.5
6	R	(1.50)	3.2	(0.00)	2.2	8.6
7	RL	(1.73)	17.2	(.32)	2.2	23.0
8	RLrP	(1.98)	18.8	(.68)	3.4	22.2
9	RLrPK	(2.12)	26.5	(.95)	3.8	41.6
10	0	(1.51)	.7	(0.00)	1.3	13.1

TABLE 35.—NEWTON FIELD: LIME EXPERIMENT

Serial plot No.	Soil treatment	Limestone fineness (meshes per inch)	High-calcium lime			Dolomitic lime		
			Series 500 Sweet clover seed	Series 700 Wheat	Series 900 Corn	Series 600 Sweet clover seed	Series 800 Wheat	Series 1000 Corn
1	RrPK		0.00	10.8	32.6	0.00	9.8	29.0
2	RrPKL	4 down	.07	23.2	38.0	.07	22.7	36.0
3	RrPKL	4 to 10	.08	21.7	33.0	.17	20.0	39.2
4	RrPKL	10 down	.08	24.5	32.2	.28	22.5	40.4
5	RrPKL	50 down	.10	23.2	34.6	.35	18.2	40.8
6	RrPKL	Burnt	.10	23.0	34.2	.28	16.0	40.8
7	RrPK		0.00	9.3	29.8	0.00	6.8	30.2
8	RrPKL	4 down	.10	24.7	43.6	.38	21.3	47.0
9	RrPKL	4 to 10	.10	24.5	44.2	.38	19.7	48.8
10	RrPKL	10 down	.03	25.5	43.8	.28	22.3	50.2
11	RrPKL	50 down	.07	31.0	40.2	.22	23.7	41.6
12	RrPKL	Burnt	.07	29.2	45.4	.17	22.5	42.4
13	RrPK		0.00	10.8	33.8	0.00	6.8	33.0
14	RrPKL	4 down	.07	33.3	40.8	.17	28.0	41.4
15	RrPKL	4 to 10	.10	32.3	36.6	.18	27.3	48.2
16	RrPKL	10 down	.13	35.0	42.2	.10	28.7	46.6
17	RrPKL	50 down	.22	34.0	44.2	.13	30.8	43.8
18	RrPKL	Burnt	.17	33.2	47.6	.13	29.8	47.2
19	RrPK		0.00	9.8	30.8	0.00	7.2	37.2

Note.—Lime materials have been applied in amounts equivalent to pure calcium carbonate as follows: to Plots 2 to 6, 500 pounds an acre a year; to Plots 8 to 12, 1,000 pounds; to Plots 14 to 18, 2,000 pounds. The total amounts applied since 1913 are 3,000 pounds 6,000 pounds and 12,000 pounds respectively. No more will be applied until there appears to be need for it.

TABLE 36.—OBLONG FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Mixed hay	Series 400 Oats[1]
	SOUTH HALF				
1	0	25.6	10.3	(1.06)	....
2	M	39.8	10.5	(.81)	....
3	ML	37.4	14.7	(2.38)	....
4	MLrP	36.8	18.5	(2.72)	....
5	0	19.4	8.5	(.72)	....
6	R	20.2	14.0	(.82)	....
7	RL	11.6	16.5	(2.16)	....
8	RLrP	18.8	18.0	(2.51)	....
9	RLrPK	35.6	23.0	(2.86)	....
10	0	14.2	11.8	(.98)	....
	NORTH HALF				
1	RLsP	29.8	12.3	(1.54)	....
2	MLrP	46.0	11.7	(.97)	....
3	MLbP	54.0	12.5	(2.22)	....
4	MLrP	46.0	13.3	(2.48)	....
5	RL, underacidulated P	19.2	11.3	(1.22)	....
6	RLrP	32.6	15.5	(1.34)	....
7	RLbP	16.6	20.0	(2.66)	....
8	RLrP	21.6	17.2	(2.64)	....
9	RLrPK	32.4	21.5	(2.82)	....
10	RL, potassium P	31.8	12.5	(1.96)	....

Note.—In 1925 these series were divided into north and south halves for the purpose of studying the relative values of different phosphorus carriers. The plots on the south halves of all series, as well as Plots 4, 8, and 9 on the north halves, continue under the original soil treatment.

On the north halves the new soil treatment is as follows: An initial application of 4,000 pounds of limestone an acre to Plots 1, 2, 5, 6, and 10; subsequent applications to be governed by the clover requirements. Rock phosphate to Plots 2 and 6; 1,000 pounds an acre ahead of wheat and 600 pounds ahead of corn. Bone meal to Plots 3 and 7; 500 pounds an acre ahead of wheat and 300 pounds ahead of corn. Superphosphate to Plot 1; underacidulated phosphate to Plot 5, and potassium phosphate to Plot 10; all in the same amounts and applied for the same crop as the bone meal. Residues to be turned under on Plots 1, 5, and 10 as on the original residue plots.

[1]Crop failure due to late seeding.

TABLE 37.—OBLONG FIELD: LIME EXPERIMENT[1]

Kind of lime material	¼-inch mesh	¼- to ⅒-inch mesh	⅒-inch mesh	⅓₀-inch mesh	Burnt lime
	Sweet clover	Sweet clover	Sweet clover	Sweet clover	Sweet clover
High calcium	(1.52)	(1.20)	(1.52)	(1.72)	(1.48)
Dolomitic	(1.56)	(.68)	(1.60)	(1.68)	(1.68)

[1]This experiment is similar to the Newton lime experiment except that the lime materials are applied at a uniform rate (9,000 pounds calcium carbonate equivalent per acre) and no materials except lime are applied. Each yield is the average of duplicate plots.

TABLE 38.—ODIN FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Soybeans	Series 200 Wheat	Series 300 Sweet clover	Series 400 Corn
1	0	8.0	3.4	0.00	15.0
2	R	9.2	5.1	0.00	19.9
3	RL	12.8	16.3	.59	33.7
4	RLbP	13.8	22.3	.41	31.8
5	RLbPK	26.5	19.8	1.28	43.5
6	0	8.1	2.1	0.00	12.6
7	R	14.0	3.5	0.00	20.9
8	RL	19.2	18.9	.56	27.5
9	RLbP	20.3	21.0	.38	33.5
10	RLbPK	28.8	22.5	1.56	38.8

TABLE 39.—ODIN FIELD: LIME-PHOSPHORUS EXPERIMENT

		Light lime		Heavy lime	
Serial plot No.	Soil treatment	Series 500 Wheat	Series 600 Soybeans[1]	Series 700 Wheat	Series 800 Soybeans[1]
1	LeLbPK	17.5	11.7	13.3	14.0
2	LeLK	11.8	9.7	16.3	11.7
3	LeLsPK	15.3	11.2	13.8	11.0
4	LeLrPK	14.2	10.8	16.0	10.5
5	LeLK	9.2	9.2	15.8	12.5
6	LeL, slag P, K	15.8	10.8	13.2	10.2

[1]Soybeans substituted for corn in 1927 as a means of chinch-bug control.

TABLE 40.—ODIN FIELD: SWEET-CLOVER ROTATION EXPERIMENT

Rotation	Soil treatment	Corn	Soybeans	Wheat	Sweet clover
3-year sweet-clover rotation	RLbP	26.0	14.4	6.1	....
4-year sweet-clover rotation	RLbP	38.3	17.8	15.0	1.30

TABLE 41.—OQUAWKA FIELD

Serial plot No.	Soil treatment	Series 100 Rye	Series 200 Alfalfa	Series 300 Soybeans	Series 400 Corn	Series 500 Wheat	Series 600 Sweet clover
1	0	8.7	(.60)	10.5	15.6	8.8	0.00
2	M	11.3	(3.25)	12.2	26.4	11.3	0.00
3	ML	13.3	(3.54)	20.0	38.8	29.0	1.50
4	MLrP	13.8	(3.58)	17.9	38.0	27.9	1.83
5	0	8.8	(3.00)	10.5	15.6	11.5	0.00
6	R	9.4	(3.16)	9.7	18.8	16.7	0.00
7	RL	11.6	(3.34)	15.7	29.2	27.5	1.58
8	RLrP	11.8	(3.49)	15.0	28.8	28.0	1.67
9	RLrPK	11.0	(3.35)	19.2	29.0	28.8	1.83
10	0	6.4	(2.15)	8.1	13.0	14.0	0.00

TABLE 42.—PALESTINE FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Wheat	Series 200 Corn	Series 300 Alfalfa clover	Series 400 Sweet clover	Series 500	
						Wheat	Stubble hay
1	LeL	16.2	29.8	(1.65)	(1.02)	9.5	(.54)
2	LeLM	17.0	35.2	(2.20)	(1.20)	11.7	(.60)
3	LeLMsP	18.3	34.6	(2.02)	(1.52)	18.8	(.58)
4	LeLMrP	16.8	34.4	(1.88)	(2.20)	20.0	(.70)
5	LeL	14.2	25.6	(1.37)	(1.70)	14.0	(.56)
6	LeL, KCl	15.2	30.6	(1.78)	(1.55)	16.7	(.68)
7	LeLsP, KCl	17.3	34.4	(2.17)	(2.00)	21.5	(.68)
8	LeLrP, KCl	18.2	37.6	(2.13)	(1.80)	21.2	(.64)
9	LeLrP, kainit	17.2	38.0	(2.49)	(2.18)	22.7	(.74)
10	0	9.5	30.8	(.96)	(.42)	12.2	(.07)

Note.—In 1926 the rotation was changed to wheat (Hubam and alsike clover catch crop), wheat (sweet-clover catch crop), corn, soybeans, alfalfa. An initial application of limestone was made to Plots 1, 2, 5, and 6, at the rate of 8,000 pounds an acre; subsequent applications to be governed by the requirement of the legume crops. KCl is applied at the rate of 250 pounds an acre for the corn crop; kainit, at the rate of 1,000 pounds an acre ahead of the second wheat crop; superphosphate, at the rate of 300 pounds an acre for each wheat crop and 150 pounds for the corn crop. Rock phosphate is applied at the rate of 600 pounds an acre for each wheat crop and 300 pounds for the corn crop. Plots 2, 3, and 4 receive manure in amounts equivalent to the crops removed from Plot 2 of all series, applied for corn.

TABLE 43.—PALESTINE FIELD: MINOR SERIES

Soil treatment	Series 600 Alfalfa	Series 700 Wheat	Series 800 Corn
LeLsP	(1.28)	18.7	9.9
LeLrP	(1.28)	11.7	10.2
LeL	(1.04)	12.8	11.5
LeL, flowers of sulfur	(1.12)	9.6	17.5
LeLrP, flowers of sulfur	(.96)	9.1	14.2
LeL	(1.12)	5.3	13.2
LeL, gypsum	(.96)	11.2	19.1
LeLrP, gypsum	(.96)	8.5	13.7

Note.—These series were laid out in the fall of 1925. A rotation of wheat (sweet clover), corn, and alfalfa will be grown, wheat and corn alternating on two series for three years, while alfalfa occupies the third series for the same period. The following plan of soil treatment was adopted: An initial application of 6,000 pounds of limestone an acre, future applications to be governed by the crop needs. Rock phosphate, 600 pounds an acre for wheat, 300 pounds for corn, and 600 pounds for the second crop of alfalfa. Superphosphate, 300 pounds an acre for wheat, 150 pounds for corn, and 300 pounds for the second crop of alfalfa. Flowers of sulfur, 50 pounds an acre for wheat and 50 pounds for the second crop of alfalfa. Gypsum, 300 pounds an acre for wheat and 300 pounds for the second crop of alfalfa.

TABLE 44.—RALEIGH FIELD

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Soybeans[1]	Series 400 Soybeans[2]
	WEST HALF				
1	0	11.2	4.3	(.96)	1.3
2	M	35.6	6.2	(1.08)	6.3
3	ML	63.0	19.3	(1.68)	18.8
4	MLrP	68.2	19.5	(1.84)	18.3
5	0	22.0	3.3	(.69)	2.2
6	R	25.6	5.0	(.60)	3.3
7	RL	44.4	12.2	(1.60)	10.2
8	RLrP	49.8	13.7	(1.70)	11.7
9	RLrPK	61.6	21.8	(1.52)	20.3
10	0	14.6	5.0	(1.79)	3.7
	EAST HALF				
1	RL	15.0	5.3	(1.13)	8.2
2	MrP	39.6	17.3	(1.18)	9.5
3	MLbP	66.4	24.8	(2.06)	21.3
4	MLrP	68.0	24.5	(1.64)	19.0
5	RsP	13.8	17.0	(1.15)	7.5
6	RrP	20.4	18.5	(1.50)	9.3
7	RLsP	54.0	24.5	(1.60)	10.0
8	RLrP	47.2	19.3	(1.44)	10.7
9	RLrPK, gypsum	60.8	25.3	(1.69)	19.0
10	RLrP	30.6	15.7	(1.60)	7.8

Note.—In 1924 the plots on these series were divided into west and east halves and additional investigations were begun. The plots on the west halves of all series continue under the original soil treatment, but the plots on the east halves receive the treatment indicated above.

No more rock phosphate will be applied to the phosphate plots on the west halves for an indefinite period, these plots having received a total of 8,500 pounds an acre. The same holds true for the east half of Plot 9 of all series.

On the east halves the phosphatic fertilizers and gypsum are applied twice in the rotation, one-half the rotation quota ahead of wheat and one-half ahead of corn at the following annual acre rates: rock phosphate 500 pounds, superphosphate 200 pounds, bone meal 200 pounds, gypsum 200 pounds.

The minimum amount of limestone necessary to the successful growth of clovers will be applied to Plots 1-E and 10-E of all series, 4,000 pounds an acre having been applied in 1924.

[1]Substitute for clover. [2]Substitute for oats.

TABLE 45.—SIDELL FIELD

Serial plot No.	Soil treatment	Series 100 Wheat	Series 200 Alfalfa	Series 300 Clover	Series 400 Oats	Series 500 Corn
1	0	31.2	(1.36)	(3.11)	48.4	61.0
2	M	27.1	(1.46)	(3.47)	52.3	71.2
3	ML	30.7	(1.96)	(3.63)	51.9	79.8
4	MLrP	34.3	(2.46)	(3.89)	55.5	77.4
5	0	25.2	(1.50)	(2.62)	43.8	47.4
6	R	24.7	(1.45)	(2.64)	40.6	53.6
7	RL	30.7	(2.05)	(2.84)	46.9	62.2
8	RLrP	36.6	(2.25)	(3.56)	46.1	68.6
9	RLrPK	37.5	(2.81)	(3.46)	45.3	76.4
10	0	28.9	(1.82)	(2.58)	35.9	41.8

TABLE 46.—SPARTA FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Sweet clover	Series 200 Wheat	Series 300 Soybeans	Series 400 Corn
1	0	0.00	2.3	2.0	4.2
2	M	0.00	4.8	3.0	12.2
3	ML	3.17	9.8	10.5	30.2
4	MLrP	3.33	11.3	11.7	33.8
5	0	0.00	2.2	.2	10.4
6	R	0.00	2.7	2.0	11.2
7	RL	3.50	9.2	11.0	29.2
8	RLrP	2.83	9.3	8.3	28.0
9	RLrPK	4.33	10.0	11.3	35.6
10	0	0.00	1.2	.7	7.2

TABLE 47.—SPARTA FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Wheat	Series 600 Corn	Series 700 Cowpeas Seed	Series 700 Cowpeas Straw	Series 800 Timothy
1	Le	4.2	19.0	6.5	(.50)	(.02)
2	LeM	6.8	22.2	9.8	(.70)	(.04)
3	LeML	6.5	23.2	10.3	(1.04)	(.32)
4	LeMLrP	3.8	23.8	8.5	(1.04)	(.49)
5	LeMLrPK	4.2	26.2	7.0	(.94)	(.58)
6	Le	1.0	14.8	2.7	(.32)	(.09)

TABLE 48.—SPARTA FIELD: MINOR SERIES

Soil treatment	Plot A	Plot B	Plot C	Plot D	Plot E	Plot F
	Corn	Sweet clover	Alfalfa seeding	Alfalfa	Wheat varieties	Oats varieties hay
MLrPK	37.8	(.50)	....	(1.79)	....	....
MrPK	18.4	weeds	....	weeds	....	....
LeL	....	....	....	....	14.5	(1.64)

TABLE 49.—SPRING VALLEY: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 200 Stubble clover	Series 300 Clover	Series 400 Oats
1	0	17.4	26.5	....	(2.46)	31.6
2	M	37.8	36.2	....	(3.09)	48.4
3	ML	48.4	36.0	....	(2.70)	40.9
4	MLrP	50.8	40.1	....	(2.78)	59.7
5	0	23.0	34.2	....	(2.67)	42.8
6	R	26.6	38.2	(.32)	(2.28)	36.6
7	RL	27.2	40.1	(.53)	(2.29)	42.5
8	RLrP	24.8	41.2	(.58)	(2.28)	41.1
9	RLrPK	41.8	44.3	(.96)	(2.37)	46.3
10	0	25.0	29.2	....	(2.50)	42.5

TALBE 50.—SPRING VALLEY: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Corn[1]	Series 600 Alfalfa	Series 700 Oats	Series 800 Corn
1	0	12.4	(.94)	30.3	39.8
2	RM	26.8	(.92)	40.0	41.4
3	RML	28.0	(1.63)	40.9	57.2
4	RMLrP	29.6	(1.09)	32.5	53.4

[1]Corn damaged by repeated flooding in the spring.

TABLE 51.—TOLEDO FIELD

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Mixed hay	Series 400 Oats
	SOUTH HALF				
1	0	13.0	15.2	(0.00)	3.4
2	LeM	18.2	17.8	(.30)	4.1
3	LeML	39.4	29.7	(1.95)	2.5
4	LeMLrP	34.6	29.7	(2.04)	3.8
5	0	10.6	14.3	(0.00)	6.3
6	R	9.6	17.3	(0.00)	5.6
7	RL	19.0	29.2	(2.13)	4.7
8	RLrP	18.0	31.7	(1.96)	5.0
9	RLrPK	31.0	36.5	(2.69)	5.3
10	0	5.6	19.8	(0.00)	2.2
	NORTH HALF				
1	RL	25.2	22.8	(.96)	3.4
2	LeMrP	18.8	26.3	(.93)	3.1
3	LeMLbP	41.8	30.2	(2.84)	4.1
4	LeMLrP	46.6	31.2	(2.43)	4.4
5	RsP	11.4	21.5	(0.00)	2.2
6	RrP	17.2	27.0	(0.00)	3.1
7	RLsP	20.6	30.5	(2.47)	7.2
8	RLrP	18.0	31.8	(2.62)	7.2
9	RLrPK, gypsum	33.2	34.7	(3.68)	6.3
10	RLrP	13.2	31.2	(1.49)	5.9

Note.—In 1924 the plots on these series were divided into north and south halves and additional studies were begun. The plots on the south halves of the series continue under the original soil treatment but the plots on the north halves receive the soil treatment designated above. No more rock phosphate will be applied to the phosphate plots on the south halves for an indefinite period, these plots having received a total of 8,000 pounds. The same holds true of the north half of Plot 9 of all series. Both halves of Plots 2, 3, and 4 will receive the sweet-clover catch crop in the same manner as the residue plots.

On the north halves the phosphatic fertilizers and gypsum are applied twice in the rotation, one-half of the rotation quota ahead of corn and one-half ahead of wheat at the following annual acre rates: rock phosphate 500 pounds, superphosphate 200 pounds, bone meal 200 pounds, gypsum 200 pounds.

The minimum amount of limestone necessary to the successful growth of clovers will be applied to Plot 1-N and 10-N, 4,000 pounds having been applied in 1924.

TABLE 52.—UNIONVILLE FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100 Corn	Series 200 Wheat	Series 300 Soybeans	Series 400 Cotton[1]
	WEST HALF				
1	0	17.2	1.3	(.89)	....
2	M	20.0	2.8	(1.08)	....
3	ML	34.4	10.3	(1.89)	....
4	MLrP	33.4	12.5	(1.92)	....
5	0	13.0	2.3	(.71)	....
6	R	15.2	1.8	(.57)	....
7	RL	24.4	6.8	(1.62)	....
8	RLrP	27.2	11.5	(1.74)	....
9	RLrPK	34.8	14.8	(2.06)	....
10	0	11.8	2.5	(.73)	....
	EAST HALF				
1	L	12.8	.8	(1.27)	....
2	MLrP	23.8	4.0	(1.64)	....
3	ML, KCl	32.0	10.8	(1.83)	....
4	MLrP, KCl	33.4	13.3	(1.98)	....
5	LsP	15.0	4.2	(1.06)	....
6	L, $NaNO_3$	15.4	2.0	(1.10)	....
7	RLsP, KCl	29.4	10.7	(1.75)	....
8	RLrP, KCl	31.8	11.8	(1.78)	....
9	RLrP, kainit	30.8	14.3	(1.87)	....
10	LsP, $NaNO_3$	18.6	9.5	(1.21)	....

Note.—In 1925 these series were divided into west and east halves and new investigations were begun. All plots on the west halves and Plot 9 on the east halves of all series will continue under the original soil treatment; but the plots on the east halves, with the exception of Plot 9, receive the treatment indicated above. No more rock phosphate will be applied to any of the original phosphate plots for an indefinite period, these plots having received a total of 8,000 pounds an acre.

The soil treatment on the east halves is as follows: Limestone to Plots 1, 2, 5, 6, 10 at the rate of 4,000 pounds an acre; subsequent applications to be governed by the requirement of the legume crops. Rock phosphate to Plot 2; 400 pounds an acre for wheat, 500 pounds for cotton, and 300 pounds for corn. Superphosphate, 200 pounds for wheat, 250 pounds for cotton, and 150 pounds for corn. KCl, 150 pounds for cotton and 150 pounds for corn. $NaNO_3$, 200 pounds for cotton. No more residues to Plot 6.

[1]Crop failure.

TABLE 53.—UNIONVILLE FIELD: MINOR SERIES

Serial plot No.	Soil treatment	Series 500 Cowpeas Seed	Series 500 Cowpeas Straw	Series 600 Corn	Series 700 Wheat	Series 800 Timothy
1	0	2.4	(.23)	19.4	3.0	(.37)
2	MLrP	14.0	(1.58)	54.6	18.2	(2.49)
3	RLrP	8.8	(1.15)	46.6	10.4	(1.41)
4	RLrP, kainit	7.6	(1.61)	55.2	16.0	(1.50)
5	RLrP, shale	5.6	(.96)	52.7	13.9	(1.42)
6	RLrP, common salt	6.8	(1.15)	55.1	16.3	(1.38)
7	RLrP, Omaha K	8.9	(1.29)	53.6	15.6	(1.55)
8	0	3.6	(.56)	39.9	6.8	(.70)

TABLE 54.—URBANA, DAVENPORT PLOTS

Serial plot No.	Soil treatment	Series 100 Clover	Series 200 Corn	Series 300 Oats	Series 400 Alfalfa	Series 500 Wheat
		WEST HALF				
1	0	(1.93)	50.8	60.4	(.19)	32.1
2	R	(1.31)	54.0	62.2	(.12)	31.7
3	M	(2.93)	59.2	80.6	(.13)	36.2
4	RL	(1.86)	64.0	73.5	(1.47)	32.5
5	ML	(4.12)	72.0	85.9	(2.54)	37.0
6	RLrP	(2.50)	82.4	89.4	(3.03)	46.5
7	MLrP	(5.09)	80.8	85.2	(3.54)	44.6
8	RLrPK	(2.38)	78.8	86.1	(3.54)	43.3
9	MLrPK	(4.77)	80.0	77.9	(3.79)	43.6
10	LeMx5rPx5	(3.25)	83.6	80.7	(1.88)	45.1
		EAST HALF				
1	0	(.92)	48.4	68.6	(.11)	32.5
2	R	(.81)	51.6	63.2	(.04)	30.9
3	M	(2.57)	61.2	82.6	(.14)	30.6
4	RL	(1.58)	67.2	78.4	(1.79)	30.4
5	ML	(3.92)	73.2	83.6	(2.38)	34.8
6	RLbP	(2.14)	73.2	91.9	(3.50)	44.9
7	MLbP	(5.02)	75.6	81.1	(3.51)	44.5
8	RLbPK	(2.43)	76.4	89.9	(3.34)	42.9
9	MLbPK	(4.76)	75.6	86.7	(3.65)	42.2
10	LeMx5LrPx5	(3.53)	66.8	85.0	(1.88)	43.0

TABLE 55.—URBANA, MORROW PLOTS

Section of plot	Soil treatment	Plot 3 (Continuous corn) Corn	Plot 4 (Corn and oats rotation) Corn	Plot 5 (Corn, oats and clover rotation) Clover
NW	0	22.0	28.0	(.59)
SW	MLrP	41.6	74.4	(3.63)
NE	0	29.6	30.8	(1.04)
SE	MLbP	40.4	77.2	(3.70)

TABLE 56.—WEST SALEM FIELD: MAIN SERIES

Serial plot No.	Soil treatment	Series 100[2] Oats	Series 200 Soy-beans	Series 300 Corn	Series 400[3] Wheat	Series 400[3] Stubble clover	Series 500[3] Sweet clover
1	0	....	0.0	12.2	2.6	(0.00)	0.00
2	ML[1]	....	10.3	28.4	14.5	(0.00)	.92
3	ML	....	16.0	37.2	22.9	(.55)	1.50
4	MLrP	....	18.4	51.2	27.8	(.62)	.67
5	L[1]	....	3.1	5.6	10.3	(0.00)	.06
6	RL[1]	....	7.0	8.9	13.2	(0.00)	.06
7	RL	....	10.2	15.7	16.6	(.47)	1.08
8	RLrP	....	16.5	19.4	28.9	(.73)	.59
9	RLrPK	....	21.2	40.8	33.1	(1.05)	1.17
10	0	....	0.0	3.0	....	....	....

[1]Initial application of lime only. [2]Crop failure. [3]There are only 9 plots on Series 400 and 500.

TABLE 57.—WEST SALEM FIELD: MINOR PLOTS

Soil treatment	Plot A Mixed hay	Plot B Wheat	Plot B Stubble clover	Plot C Sweet clover	Plot D Mixed hay	Plot E Wheat	Plot E Stubble clover	Plot F Corn
MLrPK	(1.89)	19.1	(1.31)	1.08	(1.27)	23.9	(1.63)	11.0
MrPK	(.33)	22.0	(0.00)	0.00	(.26)	23.2	(0.00)	8.0

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